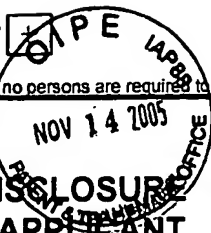


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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	10/619,798	
			Filing Date	July 17, 2003	
			First Named Inventor	Subir Ghosh	
			Group Art Unit	2188	
			Examiner Name	Kevin L. Ellis	
Sheet	1	of	2	Attorney Docket Number	OPTI 3140-6

U.S. PATENT DOCUMENTS						
Examiner Initials ¹	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
NR	A1	5,353,415		Wolford et al.	10-04-1994	
	A2	5,420,991		Konigsfeld et al.	05-30-1995	
	A3	5,511,226		Zilka	04-23-1996	
	A4	5,572,702		Sarangdhar et al.	11-05-1996	
	A5	5,335,335		Jackson et al.	08-02-1994	
	A6	5,072,369		Theus et al.	12-10-1991	
NR	A7	5,325,503		Stevens et al.	06-28-1994	
	A8					
	A9					
	A10					
	A11					
	A12					
	A13					
	A14					
	A15					
	A16					
	A17					
	A18					
	A19					
	A20					

FOREIGN PATENT DOCUMENTS							
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		Office ³	Number ⁴	Kind Code ⁵ (if known)			
NR	B1		EP 0 288 649		Gach et al.	11-02-1988	
NR	B2		EP 0 261 029		Rubinfeld	09-15-1987	
	B3						
	B4						
	B5						
	B6						
	B7						
	B8						
	B9						
	B10						

Examiner Signature	Kevin L. Ellis	Date Considered	4/18/06
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				Application Number	10/619,798
				Filing Date	July 17, 2003
				First Named Inventor	Subir Ghosh
				Group Art Unit	2188
				Examiner Name	Kevin L. Ellis
				Attorney Docket Number	OPTI 3140-6
Sheet	2	of	2		

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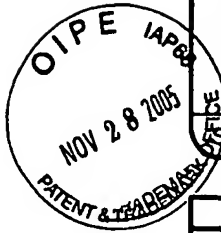
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Substitute for form 1449B/PTO			Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			Application Number	10/619,798
(use as many sheets as necessary)			Filing Date	15 July 2003
Sheet 1 of 3			First Named Inventor	Subir Ghosh
			Group Art Unit	2188
			Examiner Name	ELLIS, Kevin L.
			Attorney Docket Number	OPTI 3140-6

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
UK	C1	MOTOROLA INC., "PowerPC 601 RISC Microprocessor Technical Summary", Freescale Semiconductor, Inc., 1993	
UK	C2	NORMAN P. JOUPPI, "Improving Direct-Mapped Cache Performance by the Addition of a Small Fully-Associative Cache and Prefetch Buffers, 18 Computer Architecture News 364-373, 1990	
UK	C3	NORMAL P. JOUPPI, "Reducing Compulsory and Capacity Misses", WRL Technical Note TN-53, August 1990	
UK	C4	FREDRIK DAHLGREN ET AL., "Sequential Hardware Prefetching in Shared-Memory Multiprocessors", 6 IEEE Transactions on Parallel and Distributed Systems 733-746, 1995	
UK	C5	DEAN M. TULLSEN, SUSAN J. EGGERS, "Limitation of Cache Prefetching on a Bus-Based Multiprocessor", Proceedings of the 20th Annual International Symposium on Computer Architecture at 278-88, 1993	
WR	C6	WILLIAM Y. CHEN ET AL., "Data Access Microarchitectures for Superscalar Processors with Compiler-Assisted Data Prefetching", Proceedings of the 24th Annual International Symposium on Microarchitecture at 69-73, 1991	
UK	C7	ALAN JAY SMITH, "Cache Memories", 14 ACM Computing Surveys 473-530, 1982	
WR	C8	JEAN-LOUP BAER & TIEN-FU CHEN, "An Effective On-Chip Preloading Scheme to Reduce Data Access Penalty", In Proceedings of Supercomputing '91 at 176-86, 1991	
WR	C9	TIEN-FU CHEN & JEAN-LOUP BAER, "Effective Hardware-Based Data Prefetching for High Performance Processors, 44 IEEE Transactions on Computer 609-623, May 1995	
UK	C10	TIEN-FU CHEN & JEAN-LOUP BAER, "A Performance Study of Software and Hardware Prefetching", 22 Computer Architecture News 223-232, 1994	
UK	C11	TIEN-FU CHEN & JEAN-LOUP BAER, "Reducing Memory Latency via Non-blocking and Prefetching Caches", Fifth International Conference on Architectural Support for Programming Languages and Operating Systems at 51-61, 1992	

Examiner Signature	Kevin L. Ellis	Date Considered	4/18/06
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	Application Number	10/619,798			
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	First Named Inventor	Subir Ghosh			
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	Examiner Name	ELLIS, Kevin L.			
	Attorney Docket Number	OPTI 3140-6			
Sheet	2	of	3		

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
UH	C12	LUCIEN CENSER & PAUL FEAUTRIER, "A New Solution to Coherence Problems in Multicache Systems", 27 IEEE Transactions on Computers 1112-1118, 1978	
UH	C13	MICHEL DUBOIS ET AL., "Memory Access Buffering in Multiprocessors", 14 Computer Architecture News 434-442, 1986	
UH	C14	JOHN W.C. FU & JANAK H. PATEL, "Data Prefetching in Multiprocessor Vector Cache Memories", Proceedings of the 18th Annual International Symposium on Computer Architecture at 54-63, 1991	
UH	C15	JOHN W.C. FU & JANAK H. PATEL, "Stride Directed Prefetching in Scalar Processors", Proceedings of the 25th Annual International Symposium on Microarchitecture at 102-10, 1992	
UH	C16	EDWARD H. GORNISH ET AL., "Compiler-Directed Data Prefetching in Multiprocessors with Memory Hierarchies", Proceedings of the 1990 International Conference on Supercomputing at 354-368, 1990	
UH	C17	ALEXANDER C. KLAIBER & HENRY M. LEVY, "An Architecture for Software-Controlled Data Prefetching", Proceedings of the 18th Annual International Symposium on Computer Architecture at 43-53, 1991	
UH	C18	DAVID KROFT, "Lockup-Free Instruction Fetch-Prefetch Cache Organization", Proceedings of the 8th Annual International Symposium on Computer Architecture at 81-5, 1981	
UH	C19	ROLAND L. LEE, "The Effectiveness of Caches and Data Prefetch Buffers in Large-Scale Shared Memory Multiprocessors", (May 1987) (Ph.D. thesis, University of Illinois at Urbana-Champaign)	
UH	C20	ROLAND L. LEE ET AL., "Data Prefetching in Shared Memory Multiprocessors, Proceedings of the 1987 International Conference on Parallel Processing at 28-31, 1987	
UH	C21	TODD C. MOWRY ET AL., "Design and Evaluation of a Compiler Algorithm for Prefetching", Fifth International Conference on Architectural Support for Programming Languages and Operating Systems at 62-73, 1992	
UH	C22	ALLAN K. PORTERFIELD, "Software Methods for Improvement of Cache Performance on Supercomputer Applications (May 1989) (Ph.D. thesis, Rice University)	

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